



International Civil Aviation Organization
 CAR/SAM Regional Planning and Implementation Group (GREPECAS)
Eleventh Meeting of the GREPECAS Aeronautical Meteorology Subgroup
(AERMETS/11)
 Lima, Peru, 28 to 30 November 2011

Agenda Item 3: Implementation of the International Airways Volcano Watch (IAVW) in CAR/SAM States

NON-CONVENTIONAL VOLCANIC ASH DISPERSION SITUATION

(Presented by Argentina)

SUMMARY

The purpose of this information paper is to alert the meteorological community and aeronautical operators about the importance of monitoring particular synoptic situations associated to large volumes of post-eruption volcanic ash, which could affect air operations.

1. Background

1.1 When drafting this IP, consideration was given to the impact that the presence of volcanic ash in the atmosphere has on aviation in general. In this particular case, in which there was no volcanic eruption, strong winds from the south and southwest lifted the ashes from the ground, reducing the visibility and interrupting operations at several airports, some of which were international airports.

1.2 Following the first big eruption of the Cordon Caulle volcano on 4 June 2011 and some subsequent eruptions, tonnes of ashes were deposited on valleys, hills, lakes, and high plains in the rough terrain of the northwest of Patagonia.

1.3 Although the volcano significantly decreased its activity in July, a minimum level of activity persists to date. Starting in August, it was characterised by the release of fumarole-type water vapour fumes to heights of 2-4 km, some sporadically exceeding 6 km, with low-altitude fine ash dispersing around the volcano.

1.4 This IP highlights a very particular situation in the affected regions. It is a windy area by nature and the ashes disturbed by the wind have affected the southern part of Buenos Aires and the Atlantic coast of NE Patagonia, since the prevailing wind blows from the west.

2. Analysis

2.1 This analysis started on Friday, 14 October, when surface winds gradually reached values between 25 and 30 knots with 50-knot bursts in the morning of Saturday 15. The intermingling caused by the wind resulted in air instability, dispersing volcanic ash and other lithometeors, like dust, in the layer between 2000 and 2500 m approximately. On Saturday 15, the phenomenon affected the provinces of Neuquén, Chubut, Río Negro, La Pampa and western part of the province of Buenos Aires, restricting visibility. On Sunday 16, the wind continued from the SW, and the mix of ashes and dust reached the north of Buenos Aires between 1200 and 1300 UTC,

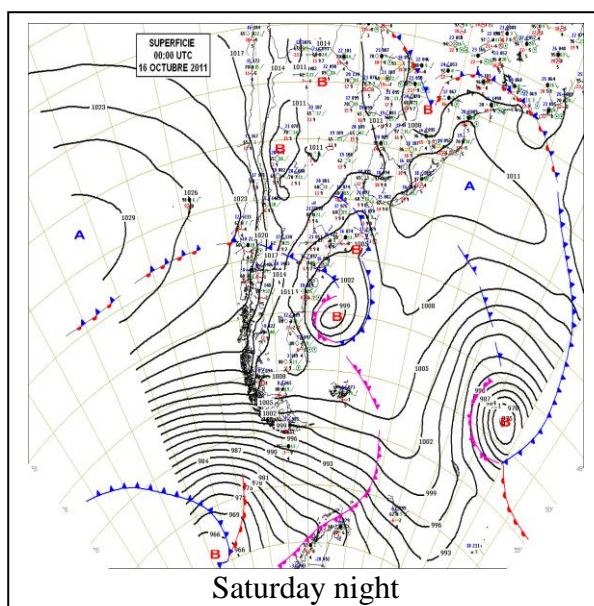
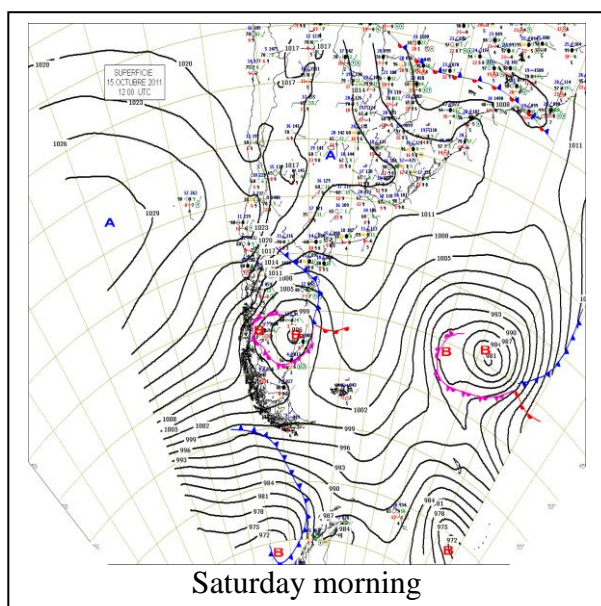
affecting the airports at Ezeiza, Aeroparque Jorge Newbery, and San Fernando, and the southern part of Uruguay. Towards the evening on Sunday 16, surface and low level winds shifted to the SE at the Buenos Aires terminal, improving surface visibility between 23 and 24 UTC, and air operations could be resumed that same night at the Ezeiza airport and early next morning at Aeroparque Jorge Newbery.

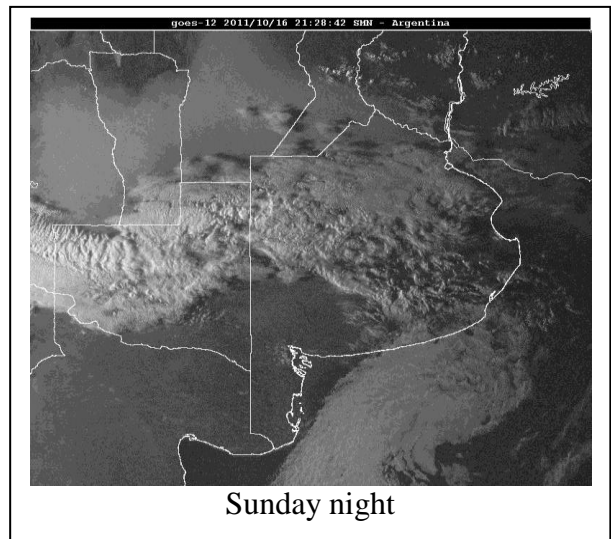
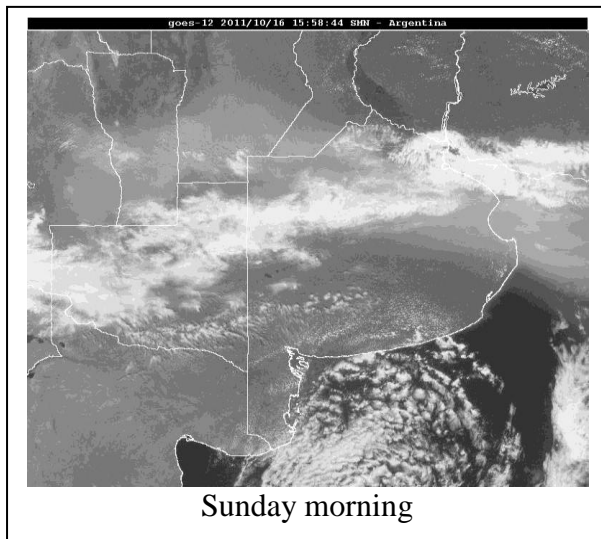
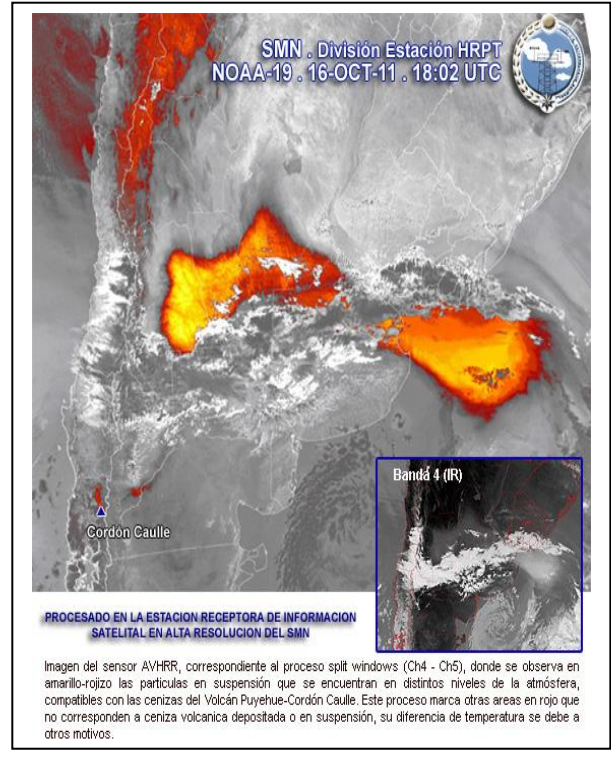
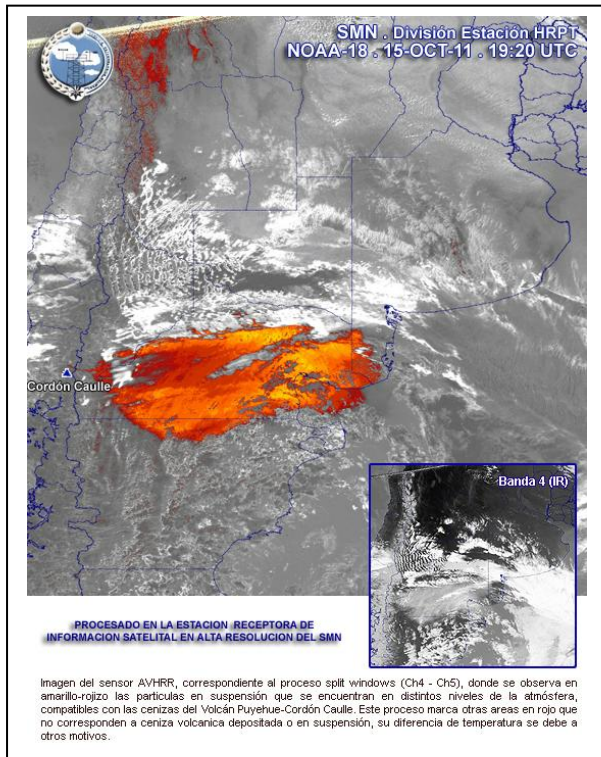
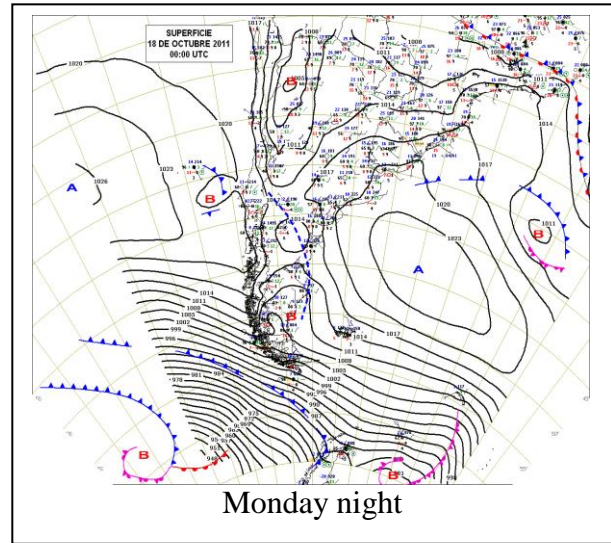
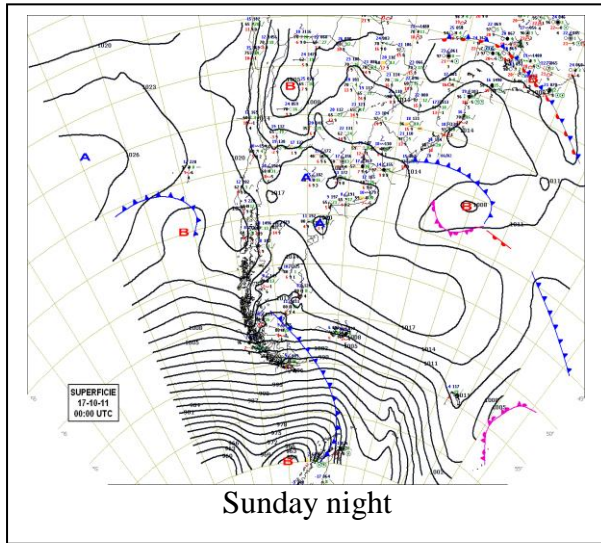
2.2 With that SE wind component, conditions also improved in the south of Uruguay, but effects started to be seen in the northern part of that same territory as well as in Rosario, Santa Fe, Río Cuarto and Córdoba, and in the morning of Monday 17, in the southern part of Brazil.

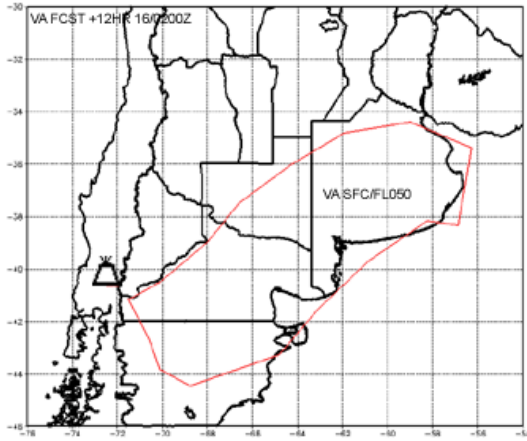
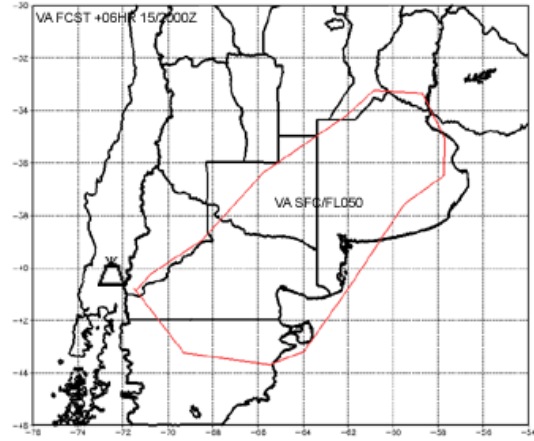
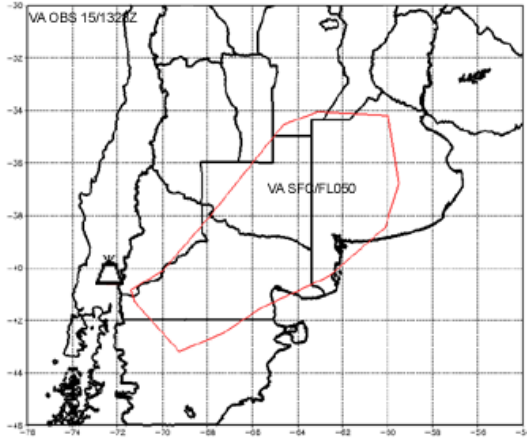
2.3 Once conditions improved at the Buenos Aires terminal on Sunday night, air operations were no longer restricted. In the following days, due to mild winds from the east, restricted visibility conditions persisted for 48 more hours at the international airports of Córdoba, San Luis and Mendoza and at the other aerodromes located in these provinces due to the presence of ashes and dust.

2.4 Almost six months after the first eruption of this volcano, the adverse effects continue to be sporadically felt at a significant distance from the volcano, affecting the normal development of air operations as a result of the main phenomenon occurred on June 4. We must remain alert to these non-conventional ash dispersion conditions for an indefinite period of time, since experts believe they could persist for several more months.

Note: The following images show this particular condition of a mixture of ash and dust being carried by the wind blowing towards the central and north part of Buenos Aires and then to the provinces of Córdoba and Mendoza.







VA ADVISORY
DTG: 20111015/1400Z
VAAC: BUENOS AIRES
VOLCANO: CORDON CAULLE 1507-141
PSN: S4031 W07212
AREA: CHILE-C

SUMMIT ELEV: 1798M
ADVISORY NR: 2011/549
INFO SOURCE: GOES-12 - GFS MODEL -
METAR SAZR/SAZG/SAZQ/SAZY
ERUPTION DETAILS: ONGOING EMISSIONS
OBS VA DTG: 15/1328Z

RMK: VA CLD FROM SUMMIT CAN NOT BE IDENTIFIED IN SATELLITE IMAGERY DUE TO EXISTENCE OF ABUNDANT CLOUDINESS. THE VA CLD INFORMED IS LIFTED FM SFC BY THE WIND. CLOUD COVER MAKES DIFFICULT TO ACCURATELY DETERMINE ITS EXTENSION. LOW CONFIDENCE IN THE +12 AND +18HR FCST FOR BOTH VA CLD BECAUSE IS SEEN TO BE DISSIPATING.
NXT ADVISORY: WILL BE ISSUED BY 20111015/2000Z

